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EXAMINER	
HOLDER, ANNER N	

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/815,172	HORMIS ET AL.	
	Examiner	Art Unit	
	ANNER HOLDER	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,7-19,21 and 26-30* is/are pending in the application.

4a) Of the above claim(s) *2 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7-19,21 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 07/07/09 have been fully considered but they are not persuasive. Regarding the Applicant's arguments, the Examiner respectfully disagrees. Johnson discloses generating the prediction error energy of the block using the decoder/deinterlacer, wherein generating the prediction error energy of the block comprises: squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block. [Pg. v-478 Col. 1 ¶ 2 - Col. 2 ¶ 1] The Applicant argues that Johnson does not discloses a video decoder nor does Johnson disclose or suggest such operation would work in a decoder. A decoder is configured as a companion to an encoder to perform the inverse processes of the encoder. Where the encoder acts as a blueprint for the decoding process. Johnson explicitly states that the scaled version of the signal is to be decoded [pg V-479 4. Frequency Scalable Video Coding ¶ 1, 3-4 and 6] Suggesting and teaching the implementation of such operations within a decoder. Thus the combination of Simic and Johnson fairly suggest and teaches the claimed limitations as presented.

2. Applicant's arguments with respect to claims 7-17 and 26-30 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments, see page 8 Rejection of the Claims under §101, filed 07/07/09, with respect to claims 1-3 and 7-13 have been fully considered and are persuasive. The rejection of claims 1-3 and 7-13 has been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 18, and 19 are rejected under 35 U.S.C. 103(a) as being anticipated by Simsic et al. (Simsic) US 6,269,484 B1 in view of Johnson et al. (Johnson), Frequency Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994.

6. As to claim 1, Simsic teaches receiving a compressed video stream at a variable length of a decoder/deinterlacer; [Abstract; Fig. 1; Fig. 2; Fig. 4-7; Col. 4 Lines 20-29; Col. 5 Lines 15-18; Col. 6 lines 43; Col. 7 lines 33-35; Col 8 line 35-38] decoding a number of blocks of the compressed video stream to output a number of blocks of decoded video data using motion compensation-based interpolation logic associated with the decoder/deinterlacer, wherein the decoding is based on at least one motion compensation vector; [Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-37; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49] and deinterlacing at least some of the number of blocks of the decoded video data to output deinterlaced video data using the motion compensation-based logic, wherein the deinterlacing of one of the blocks of the number of blocks is based on the at least one motion compensation vector [Abstract; Figs. 1-7; Col. 4 lines 29-50] if a prediction error energy for the at least

one motion vector is less than a threshold; [fig. 6; col. 8 lines 34-58 (emphasis lines 48-58)]

Simic does not explicitly teach generating the prediction error energy of the block using the decoder/deinterlacer, wherein generating the prediction error energy of the block comprises: squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block.

Johnson teaches generating the prediction error energy of the block using the decoder/deinterlacer, wherein generating the prediction error energy of the block comprises: squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block. [Pg. v-478 Col. 1 ¶ 2 - Col. 2 ¶ 1]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the sum of squared values for error teachings of Johnson with the device of coding device of Simsic allowing for maximized coding performance improving image quality and efficiency.

7. As to claim 18, see discussion of claim 1 above.

8. As to claim 19, see discussion of claim 1 above for common subject matter.

9. Claims 3 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Johnson et al. (Johnson), Frequency

Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994 in view of Zeng US 7,203,234 B1.

10. As to claim 3, Simsic (modified by Johnson) teaches the limitations of claim 1.

Simsic (modified by Johnson) does not teach a de-quantization scale factor compared to a threshold.

Zeng teaches a de-quantization scale factor compared to a threshold. [Col. 3 lines 49-65]

It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Zeng into the device of Simsic (modified by Johnson) reducing artifacts and improving video quality.

11. As to claim 21, see discussion of claim 3 above.

12. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Zeng US 7,203,234 B1 further in view of Sarkijarvi et al. US 2005/0175099.

13. As to claim 14, Simsic teaches decoding a compressed video stream to output a decoded video stream, wherein the decoding extracts at least one decode parameter, [Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-50; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49]

Simsic does not teach wherein the decoding comprises performing de-quatization based on a de-quantization scale factor, wherein the de-quantization threshold varies based on a type of compressed video stream.

Zeng teaches a de-quantization scale factor compared to a threshold. [Col. 3 lines 49-65]

It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Zeng into the device of Simsic reducing artifacts and improving video quality.

Simsic (modified by Zeng) does not explicitly teach wherein the de-quantization threshold varies based on a type of compressed video stream.

Sarkijarvi teaches wherein the de-quantization threshold varies based on a type of compressed video stream. [fig. 4; ¶ 0044, 0047]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the adjustable energy threshold of Sarkijarvi with the device of Simsic (modified by Zeng) allowing for coding efficiency.

14. As to claim 15, Simsic (modified by Zeng and Sarkijarvi) teaches at least one decode parameter comprises a motion estimation vector. [Simsic – Abstract; Figs. 1-4; Col. 6 lines 56-65; Col. 4 lines 38-51]

15. As to claim 16, Simsic (modified by Zeng and Sarkijarvi) generating the prediction error energy of the block. [Simsic – Col. 8 line 34-58; Col. 9 line 4-15]

16. Claims 7-9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Zeng US 7,203,234 B1 in view of Beattie US 2001/0002205 A1 further in view of Sarkijarvi et al. US 2005/0175099.

17. As to claim 7, Simsic teaches deinterlacing a block of a frame of video based on a vertical interpolation, if the block of the frame of the video is intra coded using interpolation logic of a decoder/deinterlacer; [Col. 3 lines 6-14; Abstract; Fig. 5] deinterlacing the block of the frame of the video with a motion compensation vector that is derived from decoding the block of the frame of the video using the interpolation logic. [Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-37; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49]

Simsic does not specifically teach a prediction error energy being compared to a threshold; a de-quantization scale factor compared to a threshold; or generation of an updated motion compensation vector, wherein the energy threshold varies according to a type of video associated with the block.

Zeng teaches a de-quantization scale factor compared to a threshold. [Col. 3 lines 49-65]

It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Zeng into the device of Simsic reducing artifacts and improving video quality.

Simsic (modified by Zeng) does not specifically teach generation of an updated motion compensation vector, wherein the energy threshold varies according to a type of video associated with the block.

Beattie teaches generation of an updated motion compensation vector. [¶ 0023; Figs. 2-3]

It would have been obvious to one of ordinary skill in the art to combine the teachings of Beattie into the device of Simsic (modified by Zeng) optimizing performance of video motion and improving video quality.

Simsic (modified by Zeng and Beattie) does not explicitly teach wherein the de-quantization threshold varies based on a type of compressed video stream.

Sarkijarvi teaches wherein the de-quantization threshold varies based on a type of compressed video stream. [fig. 4; ¶ 0044, 0047]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the adjustable energy threshold of Sarkijarvi with the device of Simsic (modified by Zeng and Beattie) allowing for coding efficiency.

18. As to claim 8, Simsic (modified by Zeng, Beattie and Sarkijarvi) teaches performing motion estimation on the block of the video [Simsic - Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-37; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49] to generate the updated motion vector using the motion compensation vector as an initial candidate motion vector. [Beattie - ¶ 0023; Figs. 2-3]

19. As to claim 9, Simsic (modified by Zeng, Beattie and Sarkijarvi) teaches decoding the frame of the video using a variable length decoder. [Simsic - Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-37; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49]

20. As to claim 12, Simsic (modified by Zeng, Beattie and Sarkijarvi) teaches generating the prediction error energy of the block using predicition error energy logic of the decoder/deinterlacer. [Beattie - ¶ 0002; Simsic – Col. 8 line 34-58; Col. 9 line 4-15]

21. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Zeng US 7,203,234 B1 in view of Beattie US 2001/0002205 A1 in view of Sarkijarvi et al. US 2005/0175099 further in view of Barrau US 6,968,007 B2.

22. As to claim 10, Simsic (modified by Zeng, Beattie and Sarkijarvi) teaches the limitations of claim 9.

Simsic (modified by Zeng, Beattie and Sarkijarvi) does not explicitly teach dequantizing a compressed bitstream that includes the frame of the video to generate a number of transform coefficients based on the de-quantizing scale factor using de-quantization logic of the decorder/deinterlacer; and performing an inverse transform operation on the number of transform coefficients using inverse transform logic of the decoder/interlacer to generate a number of pixels representative of the frame of the video.

Barrau teaches dequantizing a compressed bitstream that includes the frame of the video to generate a number of transform coefficients based on the de-quantizing scale factor; and performing an inverse transform operation on the number of transform coefficients to generate a number of pixels representative of the frame of the video. [Fig. 1; Figs. 3-6; Col. 3 lines 40-66]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Barrau with the device of Simsic (modified by Zeng, Beattie and Sarkijarvi) improving image quality and coding efficiency. [col. 1 line 36-40]

23. As to claim 11, Simsic (modified by Zeng, Beattie, Sarkijarvi and Barrau) teaches decoding the frame of the video further comprises performing motion compensation for a block in the frame of the video if the block is not intra coded and has been encoded using motion compensation. [Simsic - Abstract; Figs. 1-7; Fig. 9; Col 4 lines 29-37; Col. 5 lines 18-28; Col. 6 lines 1-20; Col. 6 line 56 - Col. 7 line 21; Col. 7 lines 37-49; col. 9 lines 4-31]

24. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Beattie US 2001/0002205 A1 in view of Sarkijarvi et al. US 2005/0175099 further in view of Zeng US 7,203,234 B1.

25. As to claim 28, Simsic (modified by Beattie and Sarkijarvi) teaches the limitations of claim 26.

Simsic (modified by Beattie and Sarkijarvi) does not explicitly teach a de-quantization scale factor compared to a threshold.

Zeng teaches a de-quantization scale factor compared to a threshold. [Col. 3 lines 49-65]

It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Zeng into the device of Simsic (modified by Beattie and Sarkijarvi) reducing artifacts and improving video quality.

26. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Beattie US 2001/0002205 A1 further in view of Sarkijarvi et al. US 2005/0175099.

27. As to claim 26, Simsic teaches a deinterlacer to deinterlace a block of a frame of video with a motion compensation vector that is derived from a decode operation performed on the frame of the video if a prediction error energy for the block is less than an energy threshold; [Abstract; Figs. 1-7; Col. 4 lines 29-50; col. 9 lines 4-31] and a display to display the deinterlaced frame of the video, [Figs. 1-4; Abstract; Col. 4 lines 52-59; Col. 5 lines 12-28]

Simsic does not specifically teach a random access memory to store the deinterlaced frame of the video.

Beattie teaches a random access memory to store video. [Figs. 2-3 (28)]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Beattie with the device of Simsic improving coding efficiency and video display.

Simsic (modified by Beattie) does not explicitly teach wherein the de-quantization threshold varies based on a type of compressed video stream.

Sarkijarvi teaches wherein the de-quantization threshold varies based on a type of compressed video stream. [fig. 4; ¶ 0044, 0047]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the adjustable energy threshold of Sarkijarvi with the device of Simsic (modified by Beattie) allowing for coding efficiency.

28. As to claim 27. Simsic (modified by Beattie and Sarkijarvi) teach the display is a progressive screen display. [Figs. 1-4; Abstract; Col. 4 lines 52-59; Col. 5 lines 12-28]

29. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Zeng US 7,203,234 B1 in view of Beattie US 2001/0002205 A1 in view of Sarkijarvi et al. US 2005/0175099 further in view of Johnson et al. (Johnson), Frequency Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994.

30. As to claim 13, Simsic (modified by Zeng, Beattie and Sarkijarvi) teaches the limitations of claim 12.

Simsic (modified by Zeng, Beattie and Sarkijarvi) does not specifically teach squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block.

Johnson teaches squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block. [Pg. v-478 Col. 1 ¶ 2 - Col. 2 ¶ 1]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Johnson with the device of Simsic (modified by Zeng, Beattie and Sarkijarvi) allowing for maximized coding performance improving image quality.

31. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Beattie US 2001/0002205 A1 in view of Sarkijarvi et al. US 2005/0175099 further in view of Johnson et al. (Johnson), Frequency Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994.

32. As to claim 29, Simsic (modified by Beattie and Sarkijarvi) teaches the limitations of claim 26.

Simsic (modified by Beattie and Sarkijarvi) does not specifically teach the prediction error energy comprises a Discrete Cosine Transform energy for the block.

Johnson teaches the prediction error energy comprises a Discrete Cosine Transform energy for the block. [Johnson - Pg. v-478 Col. 1 ¶ 2 - Col. 2 ¶ 1]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Johnson with the device of Simsic (modified by Beattie and Sarkijarvi) allowing for maximized coding performance improving image quality.

33. Claims 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Zeng US 7,203,234 B1 in view of Sarkijarvi et al. US 2005/0175099 further in view of Johnson et al. (Johnson), Frequency Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994.

34. As to claim 17, Simsic (modified by Zeng and Sarkijarvi) teaches the limitations of claim 16.

Simsic (modified by Zeng and Sarkijarvi) does not specifically teach squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block.

Johnson teaches squaring the values of a number of transform coefficients in the block to generate squared values; and summing the squared values to generate the prediction error energy for the block. [Pg. v-478 Col. 1 ¶ 2 - Col. 2 ¶ 1]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Johnson with the device of Simsic (modified by Zeng and Sarkijarvi) allowing for maximized coding performance improving image quality.

35. Claims 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simsic et al. (Simsic) US 6,269,484 B1 in view of Johnson et al. (Johnson), Frequency Scalable Video Coding Using MDCT, IEEE, Pgs. V-477-V480, 1994 in view of Zeng US 7,203,234 B1 further in view of Sarkijarvi et al. US 2005/0175099.

36. As to claim 30, Simsic (modified by Johnson and Zeng) teaches the limitations of claim 3.

Simsic (modified by Johnson and Zeng) does not explicitly teach wherein the de-quantization threshold varies based on a type of compressed video stream.

Sarkijarvi teaches wherein the de-quantization threshold varies based on a type of compressed video stream. [fig. 4; ¶ 0044, 0047]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the adjustable energy threshold of Sarkijarvi with the device of Simsic (modified by Zeng) allowing for coding efficiency.

Conclusion

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNER HOLDER whose telephone number is (571)270-1549. The examiner can normally be reached on M-W, M-W 8 am-3 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anner Holder/
Examiner, Art Unit 2621

/Tung Vo/
Primary Examiner, Art Unit 2621